

Claims

1. A multiport switching valve for a liquid flow system, comprising:

- a first member having a plurality of ports for connecting liquid lines thereto;

- a second member connected with said first member and movable relative to said first member, said second member comprising a plurality of channels, wherein said channels are arranged such that, according to a selected relative position between said first and second member, said channels connect predetermined ones of said ports of said first member with one another in a liquid conducting manner,

wherein said first member comprises at least one group of ports forming a substantially straight arrangement of ports, and said second member comprises a plurality of individual segments having at least one of said channels arranged therein, such that said at least one channel of each individual segment represents a predetermined connection scheme for connecting predetermined ones of said ports of said at least one group of ports only, with one another.

2. The valve of claim 1, wherein said at least one group of ports comprises at least three ports.

3. The valve of claim 1, wherein said at least one group of ports comprises at least eight ports.
4. The valve of claim 1, wherein all ports of said at least one group of ports are arranged in one substantially straight line.
5. The valve of claim 1, wherein said ports of said at least one group of ports are arranged in at least two adjacent substantially parallel and substantially straight lines.
6. The valve of claim 1, wherein said first member has a circular shape, and said at least one group of ports is directed substantially in radial direction with respect to a center of said first element.
7. The valve of claim 1, wherein said second member has a circular shape, and said segments are configured as sectors of said second member.
8. The valve of claim 7, wherein said second member is rotatable about its center axis relative to said first member.
9. The valve of claim 1, wherein said second member is configured as a translational slider, and said segments are arranged in parallel with one another.
10. The valve of claim 1, wherein said first member comprises at least a second group of ports forming a substantially straight arrangement of ports, wherein said ports of said

at least one second group form an arrangement substantially identical to said ports of said at least one group of ports.

11. The valve of claim 10, wherein said first member has a circular shape, and said at least one group of ports is directed substantially in radial direction with respect to a center of said first element, and wherein said at least one second group of ports is arranged circumferentially offset with respect to said at least one group of ports.
12. The valve of claim 11, wherein said at least one second group of ports is arranged opposite to said at least one group of ports with respect to said center of said first member.
13. The valve of claim 1, wherein said segments of said second member are divided from each other by separation channels leading to a common liquid outlet.
14. The valve of claim 13, wherein said second member has a circular shape, and said segments are configured as sectors of said second member, and wherein said outlet is disposed in a center of said second member and communicates with an outlet port provided on said first member.
15. The valve of claim 1, wherein said segments of said second member are divided from each other by separation channels leading to a common liquid outlet communicating with an outlet port provided on said first member, and wherein a

sensor for detecting liquid is arranged at said outlet port.

16. The valve of claim 1, wherein said channels of each segment are arranged in a same plane.
17. The valve of claim 1, wherein said channels are arranged in at least two different planes.
18. The valve of claim 1, wherein tunneling channels are provided to connect channels of different segments with each other.